WHAT IS CLAIMED IS:

1. A diagnostic system for automated diagnosis or prognosis of at least one electronic system, comprising:

a data acquisition and processing circuit that collects and processes data;

a diagnostic circuit that analyzes the data from the data acquisition and processing circuit to obtain an initial diagnosis; and

a data transmission circuit that sends the data over a distributed network to a remote diagnostic system based on the initial diagnosis.

2. The system of claim 1, wherein the diagnostic circuit analyzes the data based on at least one of a threshold analysis, a statistical analysis, a signature analysis, a trend analysis, a timing analysis, an event sequence analysis, a pattern analysis, an image processing technique, a quantitative state estimation technique, a qualitative state estimation technique, a model-based diagnostic technology, a look-up table, a neural-network-based analysis, a fuzzy-logic-based analysis, a bayesian network, a causal network, a rule-based system analysis and an expert system.

3. The system of claim 1, further comprising a remote diagnostic system that analyzes the data from the data transmission circuit and sends a communication based on the analysis of the data.

4. The system of claim 3, wherein the communication sent by the remote diagnostic system includes at least one of repair information to a third party, a parts request to a third party, a service request notification to a third party and a revised set of operating instructions to the at least one electronic system.

5. The system of claim 3, wherein the communication sent by the remote diagnostic system is transmitted to the at least one electronic system over the distributed network.

6. The system of claim 1, wherein:

the data acquisition and processing circuit detects a signature waveform of a part of the at least one electronic system and comprises an analog-to-digital converter that digitizes the signature waveform; and

the data transmission circuit sends the digitized waveform via the distributed network to the remote diagnostic system based on the initial diagnosis.

7. The system of claim 6, further comprising a remote diagnostic system that analyzes the digitized waveform from the data transmission circuit and sends a communication based on the analysis of the digitized waveform.

8. The system of claim 7, wherein the remote diagnostic system analyzes the data based on at least one of a threshold analysis, a statistical analysis, a signature analysis, a trend analysis, a timing analysis, an event sequence analysis, a pattern analysis, an image processing technique, a quantitative state estimation technique, a qualitative state estimation technique, a model-based diagnostic technology, a look-up table, a neural-network-based analysis, a fuzzy-logic-based analysis, a bayesian network, a causal network, a rule-based system analysis and an expert system.

9. The system of claim 7, wherein the remote diagnostic system analysis is based on a signature analysis.

10. A diagnostic system for automated diagnosis or prognosis of at least one electronic system, comprising:

at least one sensor that detects a signature waveform of a part of the at least one electronic system; and

a signature analysis circuit that analyzes the signature waveform to diagnose at least one characteristic of the part of the at least one electronic system.

11. The system of claim 10, further comprising:

an analog-to-digital converter that digitizes the signature waveform;

a remote diagnostic system that includes the signature analysis circuit; and

a transmission circuit that sends the digitized waveform via a distributed network to the remote diagnostic system.

12. The system of claim 11, wherein the remote diagnostic system sends a communication based on the analysis of the digitized waveform.

13. The system of claim 12, wherein the communication sent by the remote diagnostic system comprises repair information to a third party.

14. The method of claim 12, wherein the communication sent by the remote diagnostic system comprises a parts request.

15. The method of claim 12, wherein the communication sent by the remote diagnostic system comprises a service request notification.

16. The method of claim 12, wherein the communication sent by the remote diagnostic system comprises a revised set of operating instructions.

17. The system of claim 12, wherein the communication sent by the remote diagnostic system is over the distributed network.

18. A method for diagnosing or predicting failures in at least one electronic system, comprising:

obtaining data pertaining to the at least one electronic system;

analyzing the data to obtain an initial diagnosis; and

selectively transmitting the data to a remote diagnostic system based on the initial diagnosis.

19. The method of claim 18, further comprising:

remotely analyzing the data; and

sending a communication from the remote diagnostic system based on the analysis of the data.

20. The method of claim 19, wherein sending the communication from the remote diagnostic system comprises sending repair information to a third party.

21. The method of claim 19, wherein sending the communication from the remote diagnostic system comprises sending a parts request to a third party.

22. The method of claim 19, wherein sending the communication from the remote diagnostic system comprises sending a service request notification to a third party.

23. The method of claim 19, wherein sending the communication from the remote diagnostic system comprises sending a revised set of operating instructions to the at least one electronic system.

24. The method of claim 23, further comprising verifying that operation of the at least one electronic system using the revised set of operating instructions is within specification.

25. The method of claim 19, further comprising determining a revised set of operating instructions based on the analysis of the data, wherein sending the communication from the remote diagnostic system comprises sending a revised set of operating instructions to the at least one electronic system.

26. The method of claim 25, further comprising verifying that operation of the at least one electronic system using the revised set of operating instructions is within specification.

27. The method of claim 18, wherein analyzing the data is based on at least one of a threshold analysis, a statistical analysis, a signature analysis, a trend analysis, a timing analysis, an event sequence analysis, a pattern analysis, an image processing technique, a quantitative state estimation technique, a qualitative state estimation technique, a model-based diagnostic technology, a look-up table, a neural-network-based analysis, a fuzzy-logic-based analysis, a bayesian network, a causal network, a rule-based system analysis and an expert system.

28. The method of claim 19, wherein remotely analyzing the data is based on at least one of a threshold analysis, a statistical analysis, a signature analysis, a trend analysis, a timing analysis, an event sequence analysis, a pattern analysis, an image processing technique, a quantitative state estimation technique, a qualitative state estimation technique, a model-based diagnostic technology, a look-up table, a neural-network-based analysis, a fuzzy-logic-based analysis, a bayesian network, a causal network, a rule-based system analysis and an expert system.

29. The method of claim 18, wherein obtaining data includes detecting a signature waveform of a part of the at least one electronic system.

30. The method of claim 29, further comprising digitizing the signature waveform.

31. The method of claim 30, further comprising:

remotely analyzing the digitized waveform; and

sending a communication from the remote diagnostic system based on the analysis of the digitized waveform.

32. A computer-readable storage medium containing instructions for automated diagnosis or prognosis of at least one electronic system, the instructions being executable to perform steps comprising:

obtaining data pertaining to the at least one electronic system;

analyzing the data to obtain an initial diagnosis; and

selectively transmitting the data to a remote diagnostic system based on the initial diagnosis.

33. A computer-readable storage medium containing instructions for automated diagnosis or prognosis of at least one electronic system, the instructions being executable to perform steps comprising:

receiving data pertaining to the at least one electronic system when the data has been selectively transmitted based upon an initial diagnosis;

analyzing the data; and

generating a communication from the remote diagnostic system based on the analysis of the data.

34. The computer-readable storage medium of claim 33, wherein the instructions that generate the communication include instructions that generate repair data; and

instructions that transmit the repair data to a third party.

35. The computer-readable storage medium of claim 33, wherein the instructions that generate the communication include instructions that generate a parts request; and

instructions that transmit the parts request to a third party.

36. The computer-readable storage medium of claim 33, wherein the instructions that generate the communication include instructions that generate a service request notification; and

instructions that transmit the service request notification to a third party.

37. The computer-readable storage medium of claim 33, further containing instructions executable to transmit the communication over the distributed network.

38. The computer-readable storage medium of claim 33 wherein the instructions that generate the communication include instructions that generate a revised set of operating instructions; and

instructions that transmit the revised set of operating instructions to the at least one electronic system.

39. The computer-readable storage medium of claim 38, further containing instructions executable to verify that operation of the at least one electronic system according to the revised set of operating instructions is within specification.

40. The computer-readable storage medium of claim 32, wherein the instructions that obtain data include instructions that detect a signature waveform of a part of the at least one electronic system.

41. The computer-readable storage medium of claim 40, further containing instructions that digitize the signature waveform.

42. A computer-readable storage medium containing instructions for automated diagnosis or prognosis of at least one electronic system, the instructions being executable to perform steps comprising:

receiving a signature waveform pertaining to the at least one electronic system when the signature waveform has been selectively transmitted based upon an initial diagnosis;

analyzing the signature waveform; and

generating a communication from the remote diagnostic system based on the analysis of the signature waveform.

43. The computer-readable storage medium of claim 42, wherein the instructions that analyze the signature waveform include instructions for signature analysis.

44. A system for automated diagnosis or prognosis of at least one electronic system, the system comprising:

a first computer-readable storage medium containing instructions executable to perform steps of obtaining data pertaining to the at least one electronic system, analyzing the data to obtain an initial diagnosis, and selectively transmitting the data to a remote diagnostic system based on the initial diagnosis; and

a second computer-readable storage medium containing instructions executable to perform steps of receiving the data when the data has been selectively transmitted based upon the initial diagnosis, further analyzing the data, and generating a communication from the remote diagnostic system based on the further analysis of the data.